A Study of Clients Returning for Counseling After HIV Testing: Implications for Improving Rates of Return

RONALD O. VALDISERRI, MD, MPH
MELINDA MOORE, MD, MPH
A. RUSSELL GERBER, MD
CARL H. CAMPBELL, Jr., MPA
BETH A. DILLON, MSW
GARY R. WEST, MPA

The authors are with the Centers for Disease Control and Prevention. Staff members of the National Center for Prevention Services are Dr. Valdiserri, Deputy Director (HIV); Mr. West, Assistant Deputy Director (HIV); Dr. Gerber, Medical Epidemiologist, Office of the Deputy Director (HIV); Mr. Campbell, Chief, and Ms. Dillon, Public Health Advisor, Program Development and Technical Support Section, Program Operations Branch, Division of Sexually Transmitted Diseases and HIV Prevention. Dr. Moore is Deputy Director of the International Health Program Office.

Kimberly A. Todd, National Center for Prevention Services, Division of Sexually Transmitted Diseases and HIV Prevention, assisted in the data analysis.

Portions of the research were presented in a poster session at the VIII International Conference on AIDS, Amsterdam, The Netherlands, July 19-24, 1992.

Tearsheet requests to Dr. Ronald O. Valdiserri, CDC, MS E07, Atlanta, GA 30333; tel. (404) 639-1480, fax (404) 639-1459.

Synopsis

Pretest and posttest counseling have become standard components of prevention-oriented human immunodeficiency virus (HIV) antibody testing programs. However, not all persons who receive pretest counseling and testing return for posttest counseling. Records of 557,967 clients from January through December 1990, representing more than 40 percent of all publicly funded HIV counseling and testing, were analyzed to determine variables independently associated with returning for HIV posttest counseling. On average, 63 percent of clients returned for posttest counseling. The rate varied by self-reported risk behavior, sex, race or ethnicity, age, site of counseling and testing, reason for visit, and HIV serostatus.

In multivariate logistic models, persons who were young, African American, and pretest counseled in sexually transmitted disease (STD) clinics or family planning clinics were least likely to return for posttest counseling. Those clients who consider themselves to be at risk for HIV infection may be more likely to act on that perception and to follow through with posttest counseling than those who do not perceive risk. Counselors should make special efforts during pretest counseling to encourage adolescents, members of racial or ethnic minorities, and persons seen in STD and family planning clinics to return for posttest counseling by helping them understand and accept their own personal risk of HIV infection. Counselors need to establish, with the client's participation, a specific plan for receiving test results and posttest counseling.

FOLLOWING COMMERCIAL LICENSURE of an enzyme-linked immunosorbent assay (ELISA) to detect antibodies to human immunodeficiency virus (HIV) (*1*), the Centers for Disease Control and Prevention (CDC) recommended that persons in "high risk groups" should be given "the opportunity to know" their HIV serostatus as a means of enhancing risk-reduction efforts (*2*). The recommendations encouraged counseling for "high risk" seronegative and for seropositive persons (*2*). Subsequently, recommendations have continued to endorse counseling and testing of persons infected or at risk for HIV infection as "an important component of prevention strategy" (*3*) and have supported the importance of counseling before and after testing (*3*).

Today, pretest and posttest counseling have become standard components of prevention-oriented HIV antibody testing programs (*4*). Publicly supported HIV counseling and testing services are available in thousands of sites nationwide (*5*). However, not all persons who receive pretest counseling and testing return for their test results and hence do not learn the results or have an opportunity to receive posttest counseling (*6*). In some settings, less than half of the persons receiving HIV pretest counseling and testing voluntarily return to learn the results of their tests and to receive posttest counseling (*7*). We review data from publicly supported HIV counseling and testing sites from January through December 1990 to identify

factors independently associated with returning for HIV result disclosure and posttest counseling services.

Methods

During the study period, 27 of 65 State, territorial, and local health departments ("project areas"), funded by CDC to provide HIV counseling and testing services, used a special client record data base in collecting detailed information, including posttest counseling return rates by location, type of testing site, client demographics (self-reported risk exposure(s), sex, age, and race or ethnicity), and HIV serostatus.

Prior to analysis, we examined all individual client records within each of the 27 project areas to determine the overall percentage and distribution of the missing dependent variable, posttest counseling return data, by project area. The distribution of missing dependent variable data from 25 of the project areas clustered within an acceptable range. Two project areas were outliers, reporting more than 30 percent of their data missing (that is, not available) for the dependent variable. To avoid potential bias from those two project areas with large amounts of missing data, all records from both project areas were excluded from further analysis. We analyzed client records for the period January through December 1990 from 25 project areas: Alabama, Connecticut, Delaware, District of Columbia, Florida, Illinois, Indiana, Kentucky, Louisiana, Massachusetts, Michigan, Nebraska, Nevada, New Mexico, Ohio, Oklahoma, Pennsylvania, Tennessee, Texas, Washington, Puerto Rico, New York City, Houston, Chicago, and Philadelphia. Because this analysis includes all publicly funded HIV counseling and testing provided by each of those health departments, it encompasses both rural and urban areas as well as high and low HIV seroprevalence areas.

Client demographics, self-reported risk exposure behavior, principal reason for visit, HIV serostatus, and type of service delivery site were analyzed in univariate analyses with posttest counseling return, using chi-square tests. Relevant variables identified in the univariate analyses were entered into forward stepwise multivariate logistic models to determine variables independently associated with returning for HIV posttest counseling. The first set of models explored independent associations across levels within each individual variable ("single variable models"). A second model explored independent associations when all of the variables were entered into the model ("full model").

Results

During the study period, the 25 project areas reported 591,138 tests, representing 43.3 percent of the total number of publicly funded HIV tests reported during that period. Of the 591,138 tests performed in these project areas, records with information on posttest counseling return were available for 557,967 (94.4 percent).

Table 1 contains information on posttest counseling return rates by self-reported risk exposure category, client demographics, type of service delivery site, reason for visit, and HIV antibody serostatus. On average, 63 percent of persons who received HIV pretest counseling and testing returned to learn their test results and obtain posttest counseling. However, this rate varied significantly for each of the variables examined (chi-square test, $P < 0.0001$). Regarding self-reported risk exposure behavior (table 1), men who have sex with men had the highest return rate for posttest counseling (88 percent), and persons who acknowledged no risk for HIV infection had the lowest (57 percent).

When client demographics were examined (table 1), women were found to have a lower posttest counseling return rate (62 percent) than men (65 percent). Members of racial or ethnic minorities were found, in general, to have posttest counseling return rates lower than those of nonminority clients. The association was not true for Asians or Pacific Islanders, whose posttest counseling return rate was higher (79 percent) than the rate for white clients (75 percent). African American clients had the lowest posttest counseling return rates (42 percent). In terms of age, both 13- to 19-year-olds (45 percent) and 20- to 29-year-olds (61 percent) had posttest counseling return rates below average.

Posttest counseling return rates varied significantly by type of service delivery site (table 1), with private physician offices (89 percent), colleges (87 percent), and free-standing HIV counseling and testing centers (85 percent) recording the highest return rates. The lowest posttest counseling return rates were observed in sexually transmitted disease (STD) clinics (42 percent), family planning clinics (54 percent), and prenatal and obstetric testing sites (58 percent).

Persons who reported that the main reason for their visit was to obtain HIV counseling and testing had a higher return rate for HIV posttest counseling (74 percent), compared to persons who reported other principal reasons for their visit (44 percent) (table 1). Table 1 demonstrates that the posttest counseling return rate was higher for HIV

Table 1. Posttest counseling return rates for 557,967 clients of publicly supported HIV counseling and testing sites, 1990

Characteristic	Posttest counseled: Yes — Number	Yes — Percent	No — Number	No — Percent	Total
Total	354,253	63.5	203,714	36.5	557,967
Self-reported HIV risk exposure					
MSM	55,304	88.3	7,314	11.7	62,618
Heterosexual IDU	35,400	70.1	15,101	29.9	50,501
Sex partner at risk	34,806	77.0	10,404	23.0	45,210
Exchanged sex for drugs or money	12,051	57.2	9,026	42.8	21,077
Blood recipient	6,292	69.4	2,779	30.6	9,071
MSM and IDU	3,770	78.1	1,055	21.9	4,825
Hemophiliac	314	74.8	106	25.2	420
No acknowledged risk	206,316	56.6	157,929	43.4	364,245
Sex					
Male	189,071	64.9	102,145	35.1	291,216
Female	164,453	61.9	101,046	38.1	265,499
Race or ethnicity					
White	204,640	75.5	66,389	24.5	271,029
Black	83,484	42.4	113,471	57.6	196,955
Hispanic	58,920	73.6	21,154	26.4	80,074
Asian or Pacific Islander	2,521	79.0	670	21.0	3,191
American Indian or Alaskan Native	1,056	67.8	502	32.2	1,558
Other	2,995	76.0	944	24.0	3,939
Age (in years)					
Younger than 5	693	73.6	248	26.4	941
5–12	1,079	74.9	362	25.1	1,441
13–19	33,347	44.8	41,149	55.2	74,496
20–29	145,819	61.0	93,377	39.0	239,196
30–39	110,151	69.7	47,825	30.3	157,976
40–49	42,171	74.8	14,244	25.2	56,415
Older than 50	19,866	77.7	5,705	22.3	25,571
Type of service delivery site					
STD clinic	85,270	42.2	116,580	57.8	201,850
HIV CTS	164,560	85.1	28,785	14.9	193,345
Family planning clinic	21,259	54.3	17,917	45.7	39,176
Prenatal, obstetric clinic	22,282	57.6	16,419	42.4	38,701
Drug treatment center	21,866	68.7	9,950	31.3	31,816
Health department, other	10,071	72.9	3,741	27.1	13,812
Prison	7,937	78.2	2,214	21.8	10,151
Tuberculosis clinic	3,321	73.0	1,231	27.0	4,552
Private physician	2,948	88.9	367	11.1	3,315
College	2,211	87.5	315	12.5	2,526
Other	12,261	66.8	6,102	33.2	18,363
Reason for visit					
HIV test	263,004	74.5	89,830	25.5	352,834
Other	91,249	44.5	113,884	55.5	205,133
HIV serostatus					
Positive	19,556	81.8	4,353	18.2	23,909
Negative	334,697	62.7	199,361	37.3	534,058

NOTE: HIV = human immunodeficiency virus. MSM = men who have sex with men. IDU = injecting drug users. STD = sexually transmitted disease. HIV CTS = HIV counseling and testing sites.

antibody-positive persons (82 percent) compared to the rate among persons who were determined to be HIV antibody-negative (63 percent).

Odds ratios (OR) for the single variable and full models were calculated (table 2) after identifying a specific reference level for each variable (OR = 1.00). Ninety-five percent confidence intervals for the odds ratios in the full model are shown in the last column of table 2. In the single variable models, all of the variable levels shown, with the exception of "race or ethnicity, other" ($P = 0.3$) and "risk exposure, exchanged sex for drugs or

money" (P = 0.1) were significantly associated with posttest counseling return (all of the remaining variables were significant at the 0.0001 level except for "age younger than 5 years," which was significant at the 0.01 level).

In the full model, only the following variable levels lacked statistical significance: "race or ethnicity, other" (P = 0.2); "risk exposure, hemophiliac" (P = 0.1); and "site type, prison" (P = 0.8). The remainder of the variable levels entered into the full model were significantly associated with posttest counseling return. All of the remaining variables were significant at the 0.0001 level except for "risk exposure, blood recipient," which was significant at the 0.02 level. Odds ratios for the majority of the variable levels did not change direction from the single to the full variable model; that is, if the odds ratio was less than one in the single model, it remained less than one in the full model, and the same was true for odds ratios greater than one. The exceptions to this occurred with the variable levels of "sex, female"; "race or ethnicity, other"; "service delivery site type, prison"; "service delivery site type, TB clinic"; and "risk exposure, heterosexual IDU."

Reviewing the results of the full model, the variable levels with the largest odds ratios (that is, the strongest association with posttest counseling return when compared to the variable reference level) were "risk exposure, men who have sex with men" (OR = 2.40); and "HIV serostatus, positive" (OR = 2.04). In the full model, those variable levels with the smallest odds ratios (that is, the strongest association with failure to return for posttest counseling when compared to the variable reference level) were as follows: "service delivery site type, STD clinic" (OR = 0.27); "service delivery site type, family planning clinic" (OR = 0.34); "race or ethnicity, black" (OR = 0.38); and "age, 13-19 years" (OR = 0.53).

Discussion

The findings confirm previous work (*8, 9*) and indicate that the variables of sex, race or ethnicity, age, type of service delivery site, self-reported risk exposure, reason for visit, and HIV serostatus were all associated with posttest counseling return rates in publicly funded settings. In these analyses, we found that persons who were young, African American, and who received their HIV pretest counseling in STD clinics or family planning clinics were significantly less likely to return to learn the results of their tests and to receive posttest counseling.

Table 2. Multivariate logistic models of posttest counseling return of 557,967 clients of publicly supported HIV counseling and testing sites, 1990

Variable and level	Odds ratio		Full model 95 percent confidence level
	Single variable model	Full model	
Sex:			
Male	1.00	1.00	...
Female	0.88	1.13	1.11–1.15
Race or ethnicity:			
White	1.00	1.00	...
Black	0.24	0.38	0.38–0.39
Hispanic	0.90	0.90	0.89–0.92
Asian or Pacific Islander	1.22	1.19	1.08–1.30
American Indian or Alaskan Native	0.68	0.64	0.57–0.72
Other	1.04	0.95	0.88–1.03
Age (in years):			
30–39	1.00	1.00	...
Younger than 5	1.20	1.33	1.14–1.55
5–12	1.30	1.23	1.08–1.40
13–19	0.35	0.53	0.52–0.54
20–29	0.68	0.77	0.76–0.78
40–49	1.29	1.17	1.14–1.20
50 or older	1.51	1.42	1.37–1.47
Site type:			
HIV CTS	1.00	1.00	...
STD clinic	0.13	0.27	0.27–0.28
Prenatal or obstetric clinic	0.24	0.63	0.62–0.65
Family planning clinic	0.21	0.34	0.33–0.35
Drug treatment center	0.38	0.55	0.54–0.57
Health department, other	0.48	0.67	0.64–0.70
Prison	0.63	1.01	0.96–1.06
Tuberculosis clinic	0.47	1.15	1.07–1.23
Private physician	1.58	1.47	1.30–1.65
College	1.24	1.41	1.25–1.59
Other	0.35	0.74	0.71–0.77
Risk exposure:			
No acknowledged risk	1.00	1.00	...
MSM	5.80	2.40	2.33–2.47
Heterosexual IDU	1.79	0.96	0.93–0.98
MSM and IDU	2.73	1.36	1.27–1.47
Hemophiliac	2.30	1.20	0.94–1.54
Sex partner at risk	2.56	1.50	1.46–1.54
Blood recipient	1.73	1.06	1.01–1.11
Exchanged sex for drugs, money	1.02	1.11	1.08–1.15
Reason for visit:			
HIV test	1.00	1.00	...
Other	0.27	0.58	0.57–0.59
HIV serostatus:			
Negative	1.00	1.00	...
Positive	2.71	2.04	1.96–2.12

NOTE: HIV = human immunodeficiency virus. MSM = men who have sex with men. IDU = injecting drug users. STD = sexually transmitted disease. HIV CTS = HIV counseling and testing sites.

In our model, the variables most strongly associated with returning for posttest counseling were men who self-reported sex with men and persons who were HIV seropositive. In the univariate analysis and the single variable logistic model, women, compared with men, were slightly less likely to return for posttest counseling, although

this association reversed direction when controlling for the other variables in the full multivariate logistic model. Controlling for the other variables, female sex was actually associated with a slightly higher posttest counseling return rate when compared with male sex.

Other researchers have found that clients who were young (*10*), nonwhite (*11–13*), female (*10–12*), HIV seronegative (*11, 12*), and who reported a history of injecting drug use (*11, 12*) were significantly less likely to return for HIV posttest counseling. One unifying hypothesis that might explain each of those separate, significant associations is that persons who perceive themselves to be at risk for HIV infection are much more likely to act on that perception and follow through with the HIV counseling and testing process than are those who do not. Several of the variables examined explicitly support such a hypothesis. Persons who came to the testing site specifically requesting HIV testing and those who were subsequently shown to be HIV-infected were both more likely to return for HIV posttest counseling than those who did not have those attributes.

The association between the other independently associated variables and posttest counseling return may support that unifying hypothesis, although perhaps somewhat more implicitly. Our finding that members of most racial or ethnic minorities, with the exception of Asians and Pacific Islanders, were less likely to return for posttest counseling is consistent with other research suggesting that racial or ethnic minority members may either minimize their risk of HIV infection (*14, 15*) or conceptualize it as being lower or less relevant within a preexisting hierarchy of other health risks that they face in their daily lives (*16*). In our analysis, African Americans were especially prone to failure to return for HIV posttest counseling.

Our finding that adolescents and young adults were less likely to return for posttest counseling may be a manifestation of decreased perception or awareness of risk. Adolescence is generally characterized by a "propensity to engage in risk-taking behaviors" (*17*), and as a group adolescents and young adults are likely to assess improperly their individual risk of HIV infection (*18*). In our analysis, persons ages 13–29 years were significantly less likely to return for HIV posttest counseling when compared to clients of other ages. In another study of 1,007 persons seeking HIV counseling and testing at a site in California, young persons who sought testing because of a history of blood transfusion were less likely to return for their results (*19*).

We found that, in general, persons who acknowledged, at pretest counseling, behavior that could result in HIV acquisition or transmission were more likely to return for posttest counseling compared to those who did not. This association was especially pronounced for men who reported having sex with other men. Again, this finding may be related to the heightened perception of HIV risk shared by many gay men who have witnessed lovers, colleagues, and friends succumb from HIV infection.

Although women were slightly less likely to return for HIV posttest counseling than men, in the full model in which all variables were entered, female sex was actually associated with a slightly higher posttest counseling return rate. This may represent an interaction of sex with race or ethnicity, since minorities returned less for posttest counseling, and minority women are known to be overrepresented in publicly funded HIV counseling and testing sites (*20*). We did not explore interactions in the full model.

Finally, the variable of type of service delivery site, which was significantly associated with returning, may be indirectly related to risk perception. The odds of returning for posttest counseling were higher for clients of free-standing HIV counseling and testing sites, when compared with persons who were tested in most other types of service delivery site. It should be noted that the free-standing HIV counseling and testing sites (HIV CTS), unlike the other types of service delivery sites, are specifically identified with HIV counseling and testing. And, while a person may go to an STD or family planning clinic with other health needs in mind, it is unlikely that persons who come to free-standing HIV CTS sites have motives other than learning whether they are infected with HIV. Although it may seem illogical that a person who has contracted an STD and has gone to a clinic for treatment could fail to understand his or her related risk for HIV infection, other research has demonstrated this to be true (*21*).

There are caveats to the interpretation of these findings. Note that these data are derived from publicly funded HIV counseling and testing programs using the client record data base and may not be generalizable to all public counseling and testing services or to services offered within the private sector. Our data base does not permit assessment of the quality of HIV pretest counseling, which may vary and might prove to have a

significant influence on return rates. One might hypothesize, for instance, that the failure of members of racial or ethnic minorities to return for HIV posttest counseling could be related to a lack of cultural sensitivity during the pretest counseling session.

Our study does not include any direct measurement of access to health care services, which has been shown to be an impediment to health care delivery for women, minorities, and adolescents (*22-24*). The low rates of return for posttest counseling seen among adolescents and members of certain racial or ethnic minority groups could be attributable to difficulty of access.

The findings do not distinguish between anonymous and confidential services as an independent variable. Further, the data base does not permit a distinction between those clients requesting their first HIV antibody test and those requesting repeat HIV antibody testing. Finally, in many confidential HIV counseling and testing settings, special efforts are made to actively followup with clients found to be HIV infected to either provide posttest counseling in field settings or to encourage them to return to the clinic for result disclosure and posttest counseling. Those efforts may increase the overall number of seropositive persons who chose to learn their results when compared to seronegative persons.

The limitations notwithstanding, the findings have several important programmatic implications. Returning for posttest counseling is important for reasons beyond informing clients of their HIV serostatus. For high risk seronegative clients, those whose behaviors continue to place them at significant risk for HIV infection, posttest counseling provides an opportunity to make referrals to other needed prevention services, including additional prevention counseling and drug treatment, if necessary. For seropositive clients, it is the starting point for referral into medical evaluation and treatment and other prevention and support services.

For these reasons, posttest counseling is an important program component of the HIV counseling and testing process. Directors of individual programs should examine their HIV posttest counseling return rate and use the information as a quality assurance tool. In CDC's most recent program guidance to State and local health departments (*25*), program managers have been advised that when low return rates are observed, documented action steps must be taken to identify the reasons for low rates and to resolve significant barriers to seropositive and high risk seronegative clients learning their test results and obtaining necessary counseling and referral services.

Although we know from ongoing program monitoring that many individual STD clinics have excellent rates of return for posttest counseling for both seropositive and high risk seronegative clients, taken as a group their return rates are lower than those of other HIV counseling and testing sites. Nonetheless, they remain an important locale for delivery of HIV counseling and testing because the clients they serve are at very high risk of acquiring or transmitting HIV infection. Therefore, counselors in STD clinic settings should make special efforts during pretest counseling to encourage adolescents, members of racial or ethnic minorities, and clients who do not report a risk behavior for HIV but whose medical histories would suggest otherwise (such as past or current episodes of STD), to return for HIV test result disclosure and posttest counseling.

Counselors should engage these clients in a discussion of perceived and real barriers that they might face in learning the results of their HIV testing. If, as we hypothesize, failure to return may indicate a lack of understanding of personal risk or a failure to personalize individual risk for HIV infection, counselors should employ techniques during pretest counseling that encourage both risk assessment and risk acceptance, with clients facing and accepting the possibility that their behavior or the behavior of a partner may be placing them at risk for HIV infection. Some have suggested that the use of epidemiologic data, such as quantitative estimates of risk, may encourage clients to personalize their own risk for a particular health or medical problem (*26*).

Risk perception is a highly specialized and complex field of scientific study (*27, 28*), and the accurate estimation of risk is influenced by "the context in which the information is presented, the personality of the individual, and cultural factors" (*29*). Although additional research is necessary to clarify the role of risk perception in a person's acceptance of HIV counseling and testing (including returning for posttest counseling), we do know that merely informing a client of the behaviors responsible for HIV transmission will not necessarily enable all clients to determine or acknowledge their own personal risk of HIV infection.

Pretest counseling approaches that encourage clients to gauge and accept their own risk of HIV infection accurately and realistically and that incorporate a specific plan to provide test results and

posttest counseling (*30*) are likely to improve posttest counseling return rates, render these services more efficient and cost effective, accelerate the subsequent adoption of self-protective behaviors, and serve the goals of HIV prevention and early intervention.

References

1. Results of human T-lymphotropic virus type III test kits reported from blood collection centers—United States, April 22-May 19, 1985. MMWR Morb Mortal Wkly Rep 34: 375-376, June 28, 1985.
2. Additional recommendations to reduce sexual and drug abuse-related transmission of human T-lymphotropic virus type III/lymphadenopathy-associated virus. MMWR Morb Mortal Wkly Rep 35: 152-155, Mar. 14, 1986.
3. Public Health Service guidelines for counseling and antibody testing to prevent HIV infection and AIDS. MMWR Morb Mortal Wkly Rep 36: 509-515, Apr. 14, 1987.
4. Special initiative on AIDS of the American Public Health Association. HIV antibody testing. APHA/SIA Report 4. American Public Health Association, Washington, DC, 1989.
5. Publicly funded HIV counseling and testing—United States, 1985-1989. MMWR Morb Mortal Wkly Rep 39: 137-140, Mar. 9, 1990.
6. CTS summary record database: U.S. total. 1990 annual report. Centers for Disease Control, Atlanta, GA, 1990.
7. AIDS prevention programs: high risk groups still prove hard to reach. GAO/HRD-91-52. U.S. General Accounting Office, Washington, DC, 1991.
8. Moore, M., Bowen, G. S., Cahill, K., and Kirby, C. D.: Characteristics of persons not returning for HIV test results and counseling at publicly-funded test sites, U.S., 1989. Poster (Abstract S.C. 649) presented at VI International Conference on AIDS, San Francisco, CA, June 20-24, 1990.
9. Moore, M., et al.: Failures and delays in returning for HIV test results at publicly-funded clinics, U.S., 1989-1990. Poster (Abstract M.C. 3342) presented at VII International Conference on AIDS, Florence, Italy, June 16-21, 1991.
10. Nelson, A., et al.: Characteristics associated with a low return rate for HIV post-test counseling among clients in a community-based sexually transmitted disease clinic in Los Angeles County. Poster (Abstract S.C. 672) presented at VI International Conference on AIDS, San Francisco, CA, June 20-24, 1990.
11. Ginsberg, M. M.: Effectiveness of voluntary HIV antibody testing provided at a clinic treating sexually transmitted diseases. Poster (Abstract M.A.P. 62) presented at V International Conference on AIDS, Montreal, Canada, June 4-9, 1989.
12. Kappes, R., et al.: Tailoring HIV pre-test counseling in sexually transmitted disease (STD) clinics according to anticipated non-return rates in subcategories of patients. Poster (Abstract S.C. 676) presented at VI International Conference on AIDS, San Francisco, CA, June 20-24, 1990.
13. Rugg, D., Higgins, D., and Schnell, D.: Failure to return for HIV test results: a second look at determinants. Poster (Abstract E.717) presented at V International Conference on AIDS, Montreal, Canada, June 4-9, 1989.
14. Mays, V. M., and Cochran, S. D.: Issues in the perception of AIDS risk and risk reduction activities by black and Hispanic/Latina women. Am Psychol 43: 949-957 (1988).
15. Hilts, P. J.: Survey, minority women minimize AIDS. New York Times, New York, NY, Sept. 13, 1991, p. A16.
16. Gasch, H., Poulson, D. M., Fullilove, R. E., and Fullilove, M. T.: Shaping AIDS education and prevention programs for African Americans amidst community decline. J Negro Educ 60: 85-96 (1991).
17. Valdiserri, R. O.: Identifying the targets of AIDS prevention. *In* Preventing AIDS: the design of effective programs, edited by R.O. Valdiserri. Rutgers University Press, New Brunswick, NJ, 1989, pp. 91-128.
18. Brown, L. K., DiClemente, R. J., and Reynolds, L. A.: HIV prevention for adolescents: utility of the health belief model. AIDS Educ Prev 3: 50-59 (1991).
19. Catania, J. A., Kegeles, S. M., and Coates, T. J.: Psychosocial predictors of people who fail to return for their HIV test results. AIDS 4: 261-262 (1990).
20. Characteristics of, and HIV infection among women served by publicly funded HIV counseling and testing services—United States, 1989-1990. MMWR Morb Mortal Wkly Rep 40:195—204, Mar. 29, 1991.
21. James, N. J., Gillies, P. A., and Bignell, C. J.: AIDS-related risk perception and sexual behaviour among sexually transmitted disease clinic attenders. Int J STD AIDS 2: 264-271 (1991).
22. Braverman, P., et al.: Women without health insurance: links between access, poverty, ethnicity, and health. West J Med 149: 708-711 (1988).
23. Council on Ethical and Judicial Affairs: Black-white disparities in health care. JAMA 263: 2344-2346, May 2, 1990.
24. Jack, M. S., Lear, J. G., and Klerman, L.: Organization of adolescent health services. J Adolesc Health Care 9: 33S-35S (1988).
25. Cooperative agreements for human immunodeficiency virus (HIV) prevention projects program announcement and notice of availability of funds for fiscal year 1993. Centers for Disease Control. Federal Register 57: 40675-40682, Sept. 4, 1992.
26. Schoenbach, V. J., Wagner, E. H., and Karon, J. M.: The use of epidemiologic data for personal risk assessment in health hazard/health risk appraisal programs. J Chron Dis 36: 625-638 (1983).
27. Freudenburg, W. R.: Perceived risk, real risk: social and the art of probabilistic risk assessment. Science 242: 44-49, Oct. 7, 1988.
28. Slovic, P.: Perception of risk. Science 236: 280-285, Apr. 17, 1987.
29. Cleary, P. D.: Why people take precautions against health risks. *In* Taking care: understanding and encouraging self-protective behavior, edited by N.D. Weinstein. Cambridge University Press, Cambridge, MA, 1987, pp. 119-149.
30. Publicly funded HIV counseling and testing—United States, 1991. MMWR Morb Mortal Wkly Rep 41: 613-617, Aug. 28, 1992.